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# ***Cibolo Creek Watershed Study***



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# ***Cibolo Creek Watershed Study***



## **Cost-Share Study Sponsors**



## **Technical Study Team**



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# ***Cibolo Creek Watershed Study***



## **Format of Meeting**

- Power point presentation
- Open house displays
- Comments
  - Written on comment cards
  - Oral at comment table
- Meeting adjourned by 9:00 pm



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# ***Cibolo Creek Watershed Study***



## **Purpose of Meeting**

- Inform the public about the study
- Solicit comments from public about issues within the basin
- National Environmental Policy Act (NEPA) compliance





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# ***Cibolo Creek Watershed Study***



## **Agenda**

### **Study Overview**

- General Overview
- Phase 1 Summary
- Phase 2 Progress
- What's to come
  - *Phase 3 - Formulation of Alternatives & Detailed Feasibility Studies*

### **Comments / Questions**

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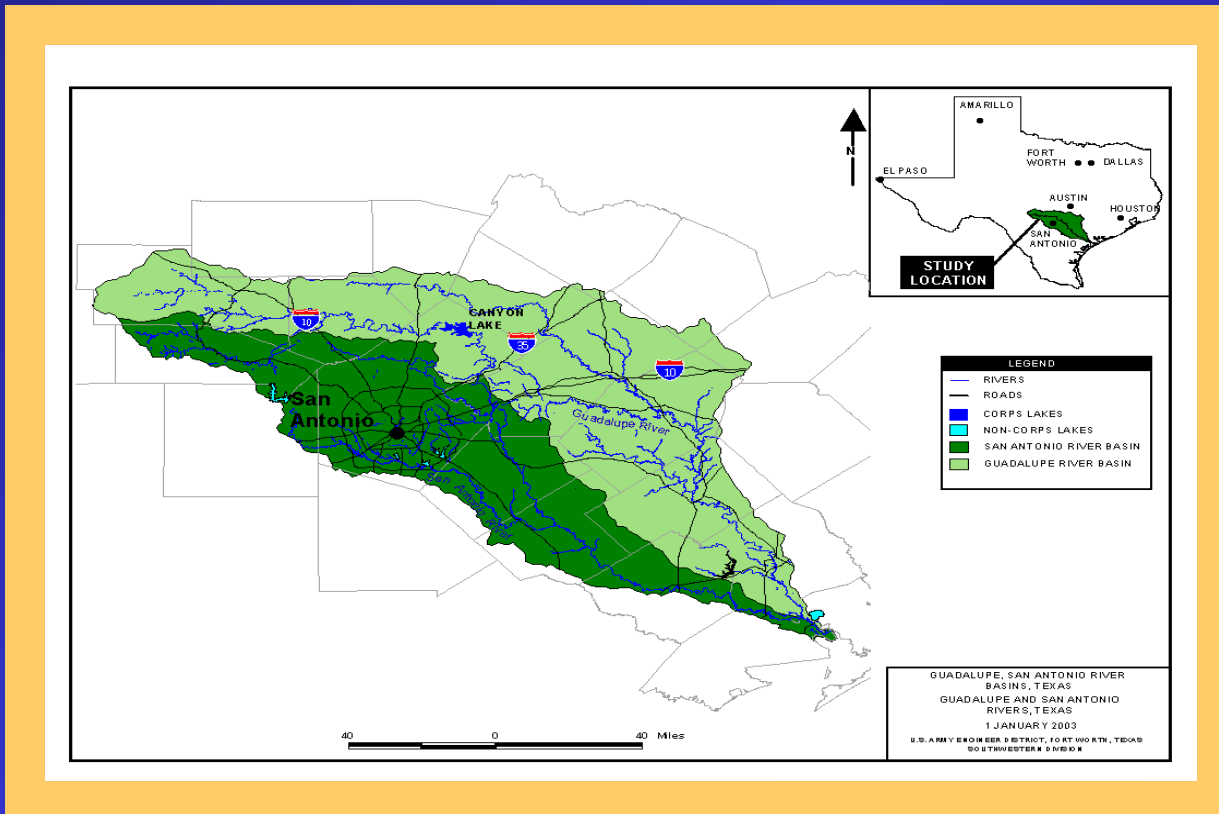
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# ***Cibolo Creek Watershed Study General Overview***



## ***Study Authority***

***House Resolution 2547 dated 11 Mar 98***



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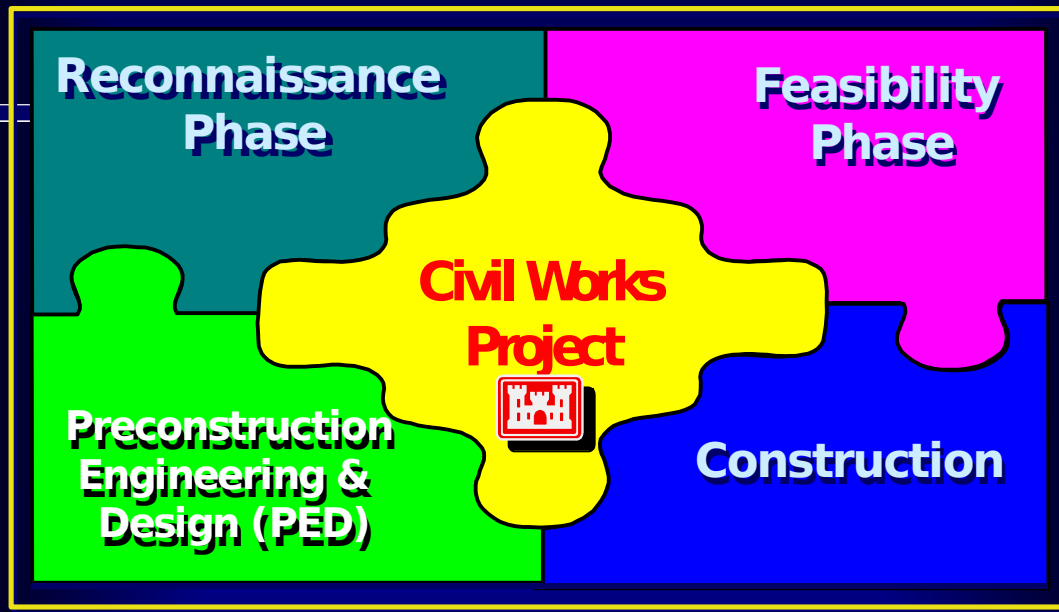


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# ***Cibolo Creek Watershed Study General Overview***



## **Planning Study Process**



Civil Works Project Delivery - "An Overview"

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# ***Cibolo Creek Watershed Study General Overview***



## **Study Purpose**

- **Ecosystem Restoration**
  - **Aquifer recharge**
  - **Water Supply**
  - **Watershed Management**
- **Flood Damage Reduction**

**Study Cost - \$2.9 M**

**Study Duration ~ 48 months**



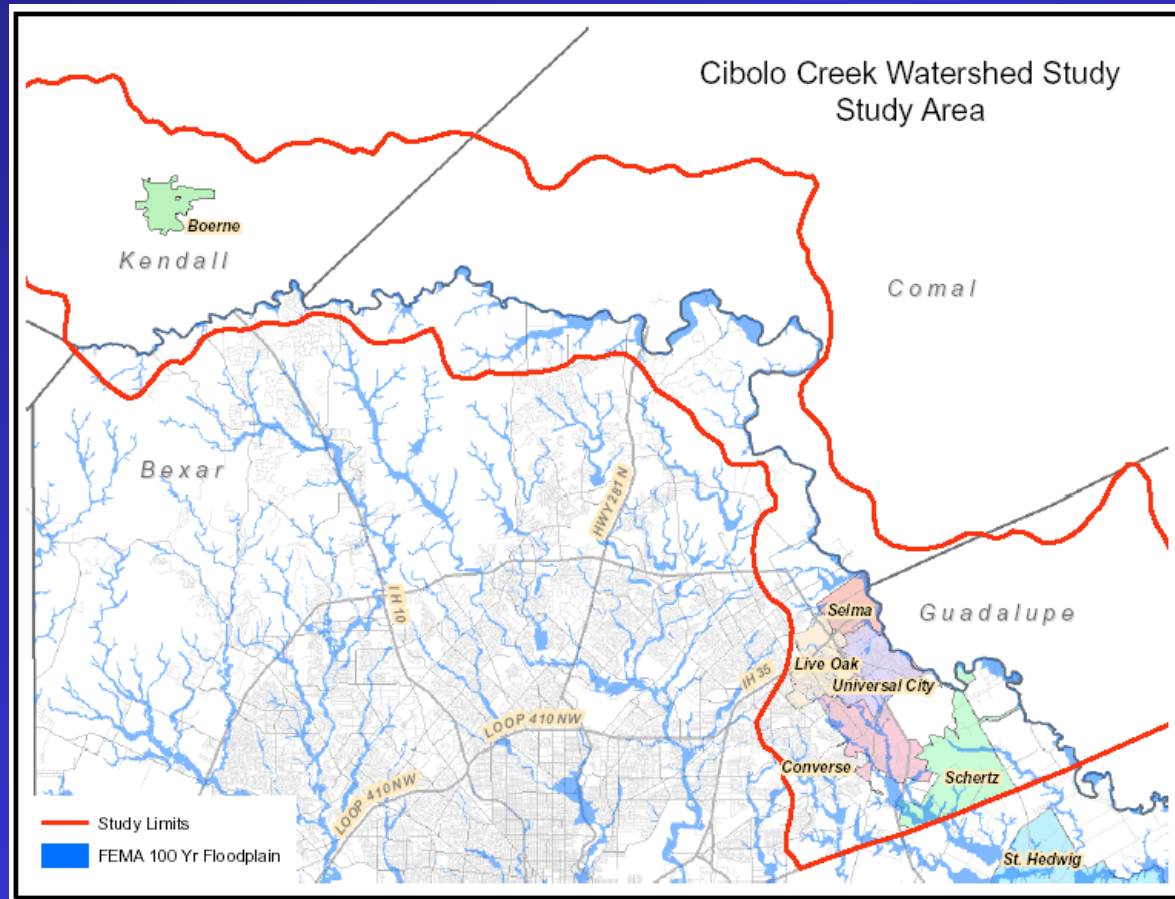


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# ***Cibolo Creek Watershed Study General Overview***



## ***Study Limits***



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# ***Cibolo Creek Watershed Study Phase 1***



## **Feasibility Study Phases**

- **Phase 1 - Existing Conditions**
- Phase 2 - Evaluate Possible Improvement Scenarios
- Phase 3 - Detailed Evaluation of Alternatives



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# ***Cibolo Creek Watershed Study General Overview***



## **Feasibility Study Schedule**

- Phase 1 - Complete 18 mos. (Mar 02 – Sep 03)
- Phase 2 - In Progress 20 mos. (Feb 04 – Sep 05)
- Phase 3 - ~ 18 - 24 mos.



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# ***Cibolo Creek Watershed Study Phase 1 Summary***



- 1. Mapping**
- 2. Ecological Analysis/Modeling  
(Fieldwork/EDYS)**
- 3. Hydrology and Hydraulics**
- 4. HTRW Analysis**
- 5. Environmental Resource Analysis**
- 6. Cultural Resources**
- 7. Flood Damage Assessment**
- 8. Economic Analysis**



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# ***Cibolo Creek Watershed Study Phase 1 Summary***



- The evaluation of the Indicators of Rangeland Health show the health of the rangeland in this watershed to be primarily moderate / slight to moderate in its departure from the ecological site descriptions for the Cibolo Creek watershed
- Extreme 5%
- Moderate to Extreme 15%
- Moderate 30%
- Slight to Moderate 31%
- None to Slight 20%





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# ***Cibolo Creek Watershed Study Phase 1 Summary***



***Rating = None to slight***



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# ***Cibolo Creek Watershed Study Phase 1 Summary***



*Rating = Slight to moderate*



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# ***Cibolo Creek Watershed Study Phase 1 Summary***



***Rating = Moderate***



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# ***Cibolo Creek Watershed Study Phase 1 Summary***



***Rating = Moderate to extreme***



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# ***Cibolo Creek Watershed Study Phase 1 Summary***



***Rating = Extreme***



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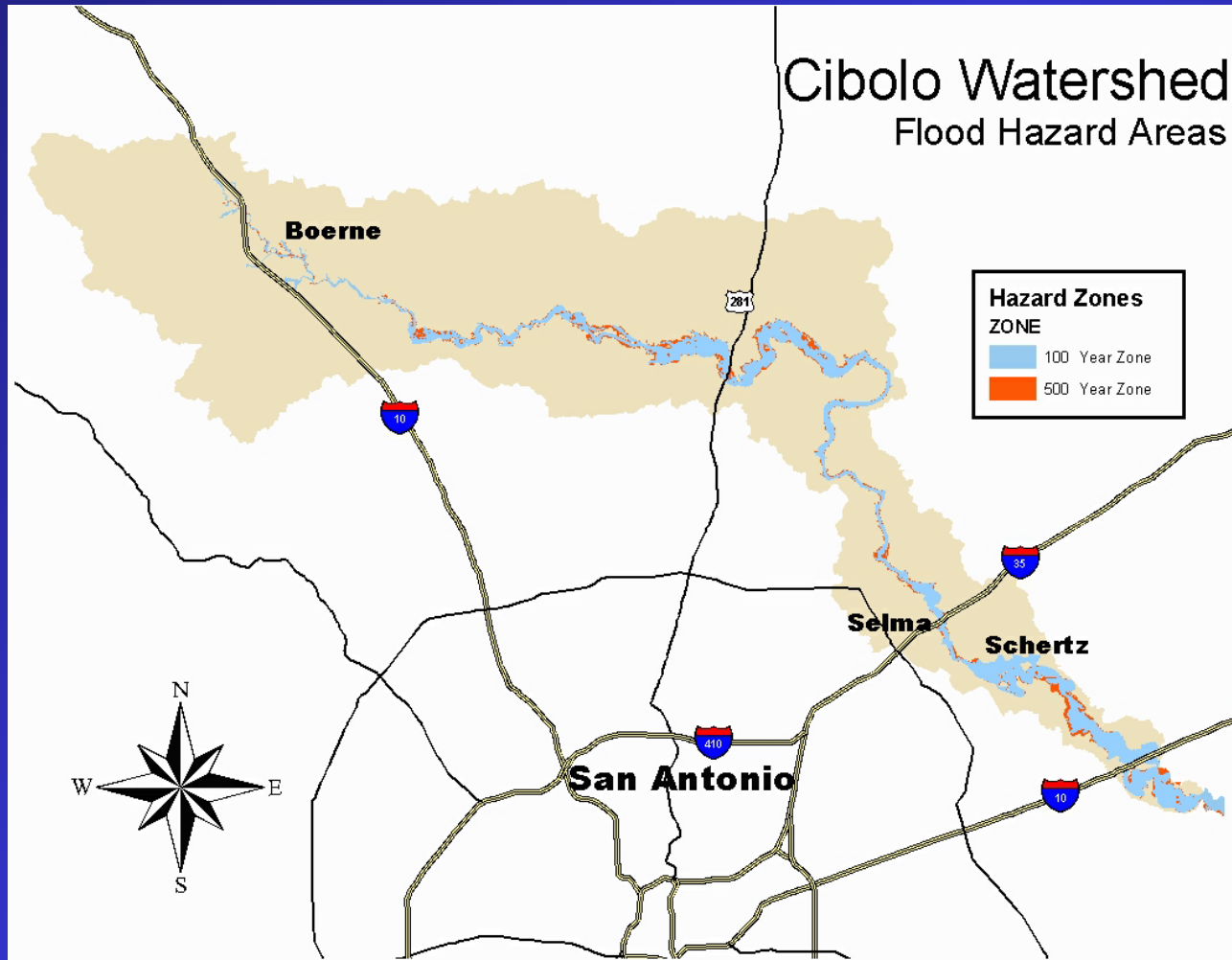
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# ***Cibolo Creek Watershed Study Phase 1 Summary***



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# ***Cibolo Creek Watershed Study Phase 2***



## **Feasibility Study Phases**

- Phase 1 - Existing Conditions
- **Phase 2 - Evaluate Possible Improvement Scenarios**
- Phase 3 - Detailed Evaluation of Alternatives



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# ***Cibolo Creek Watershed Study Phase 2***



## **Potential Best Management Practices**

**Brush management**

**Range Seeding**

**Fencing**

**Water Development**

**Prescribed Grazing**

**Prescribed Burning**

**Water and Sediment  
Control**

**Structures**

**Ponds**

**Wildlife Upland Habitat**

**Management**

**Riparian Buffers**

**Wetland Creation**

**Management of Parking Lot**

**Runoff**

**Conservation Cropping**

**Sequence**

**Crop Residue Use**

**Cover Cropping**

**Pest and Nutrient  
Management**

**Contour Buffer Strips**

**Irrigation Water  
Management**

**Filter Strips**

**Critical Area Shaping and  
Planting**

**Grassed Waterways**

**Xeriscaping**

**Greenbelts**

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# ***Cibolo Creek Watershed Study Phase 2***



## **Areas Where BMP Could be Considered**

- ☐ **Grazing and Ranch Lands**
- ☐ **Croplands**
- ☐ **Urban Areas**
- ☐ **Urban-Residential Areas**
- ☐ **Urban-Commercial Areas**



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# ***Cibolo Creek Watershed Study Phase 2***



## **Recharge Structures**

- ❑ The study expects to analyze what ecosystem restoration and water supply benefits would be derived from recharge structures
- ❑ In addition, the recharge structures would have flood damage reduction benefits



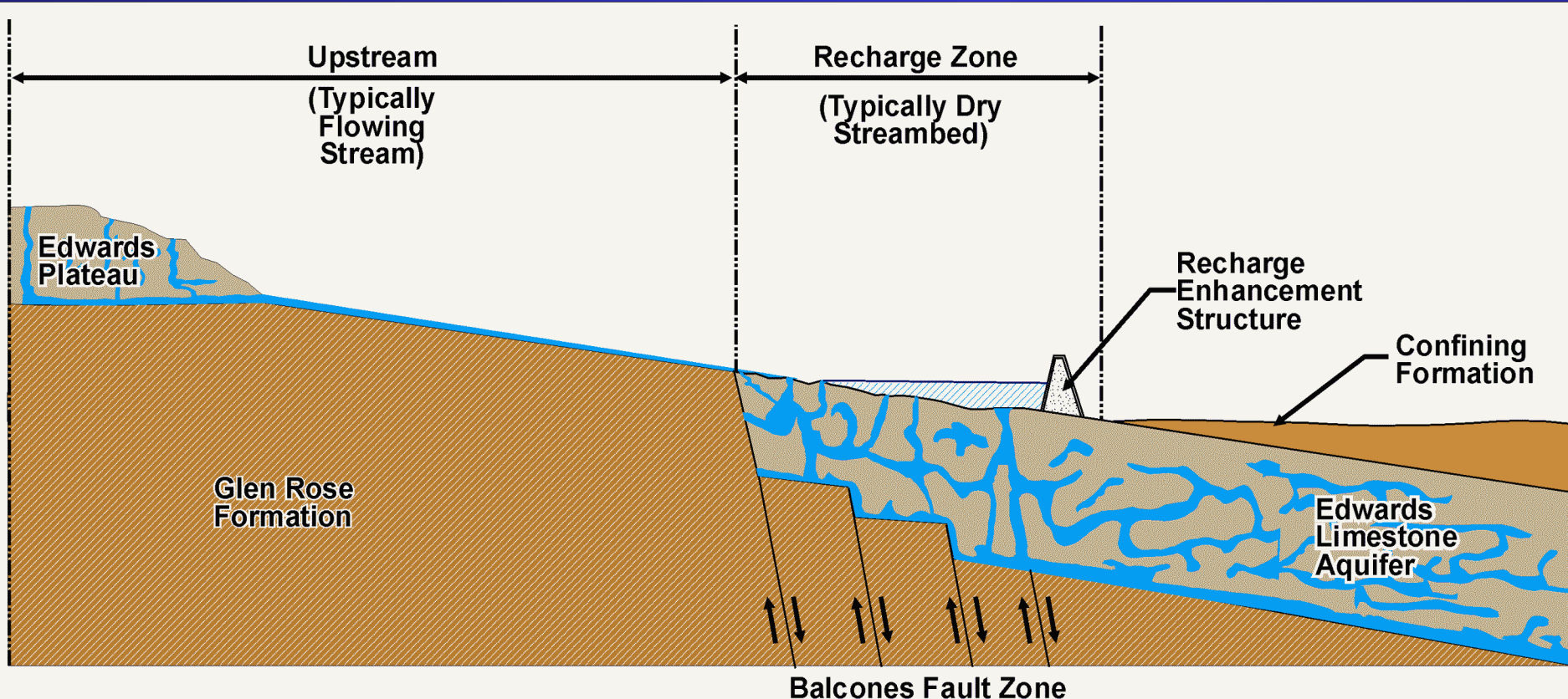


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# ***Cibolo Creek Watershed Study Phase 2***



## **Typical Recharge Structure**



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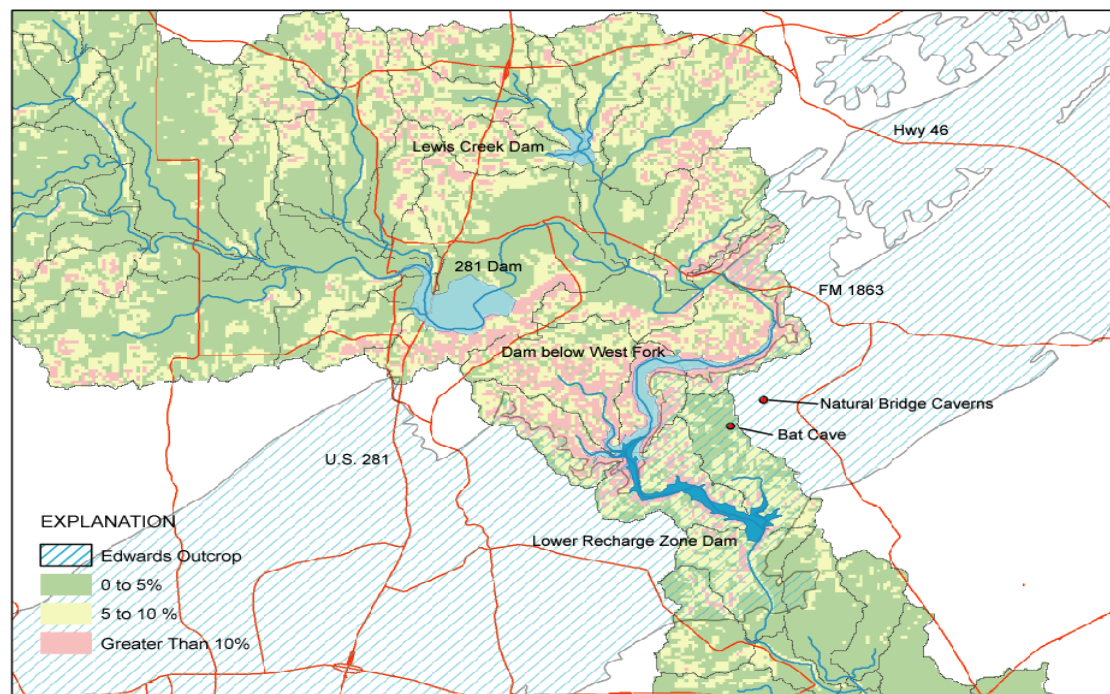


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# ***Cibolo Creek Watershed Study Phase 2***

Simulated Recharge Structure Sites in the Cibolo Creek Watershed



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# ***Cibolo Creek Watershed Study Phase 2***



	Large Recharge Structure		Small Structure
	281 Site	Recharge Zone	
Height	60'	80'	20'-30'
Storage	5,000 acre-feet	10,000 acre-feet	300-1,000 acre-feet
Outflow	5' culvert	5' culvert	5' culvert

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# ***Cibolo Creek Watershed Study Phase 2***

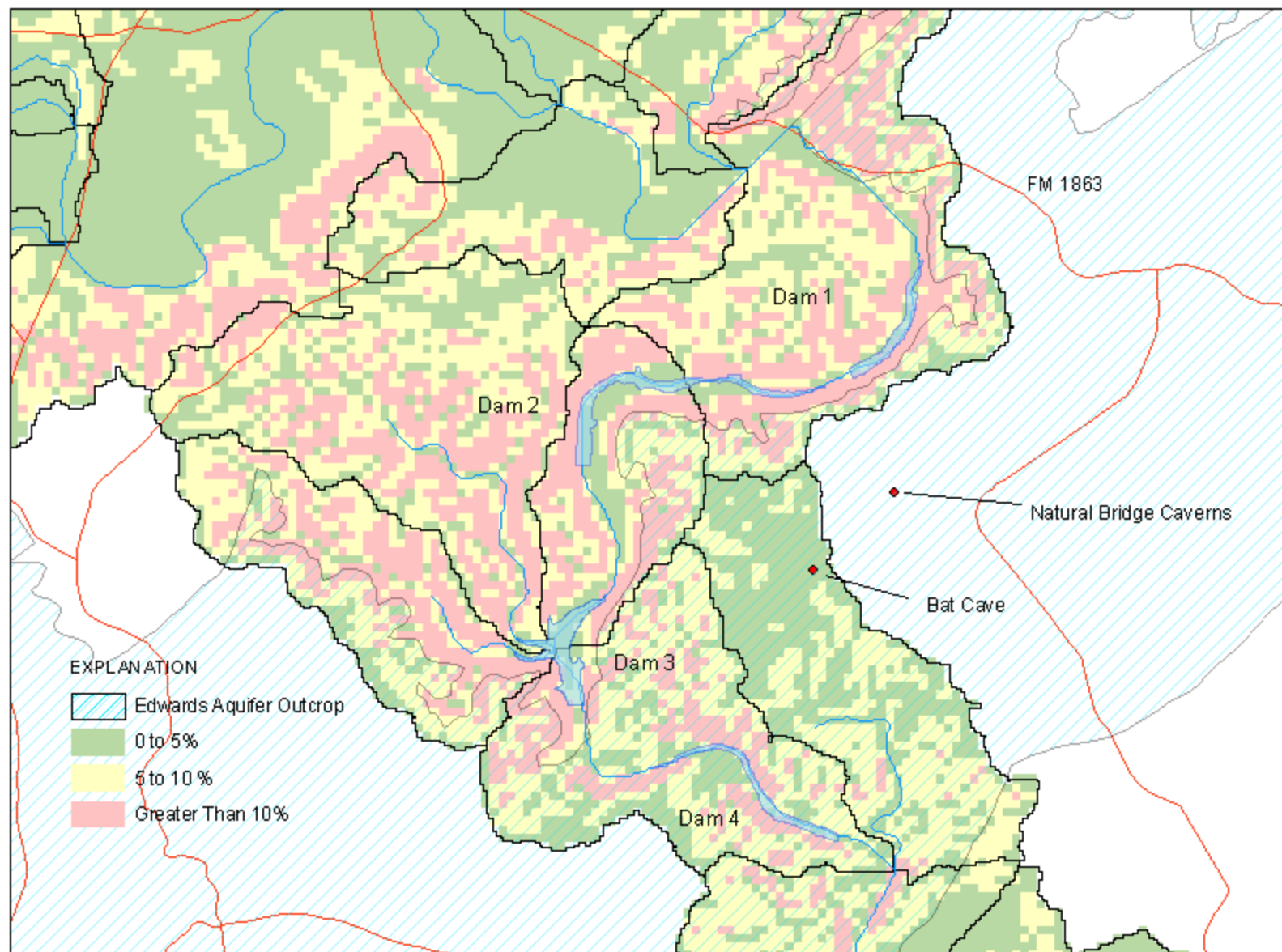


	Large Recharge Structure		Small Structure
	281 Site	Recharge Zone	
Channel Infiltration Trinity	22% ±	N/A	N/A
Channel Infiltration Edwards	3% +	18% +	5% +
Decrease in Oct. 98 peak flow at USGS Gage at Selma	10 % or 1.5' in Stage	25% or 4' in Stage	4% or 1' in Stage

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## Simulated Low-Rise Dams on the Edwards Aquifer - Cibolo Creek Watershed







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# ***Cibolo Creek Watershed Study Phase 2***



## **Phase 1 Identified Flooding Problems in Schertz and Selma**

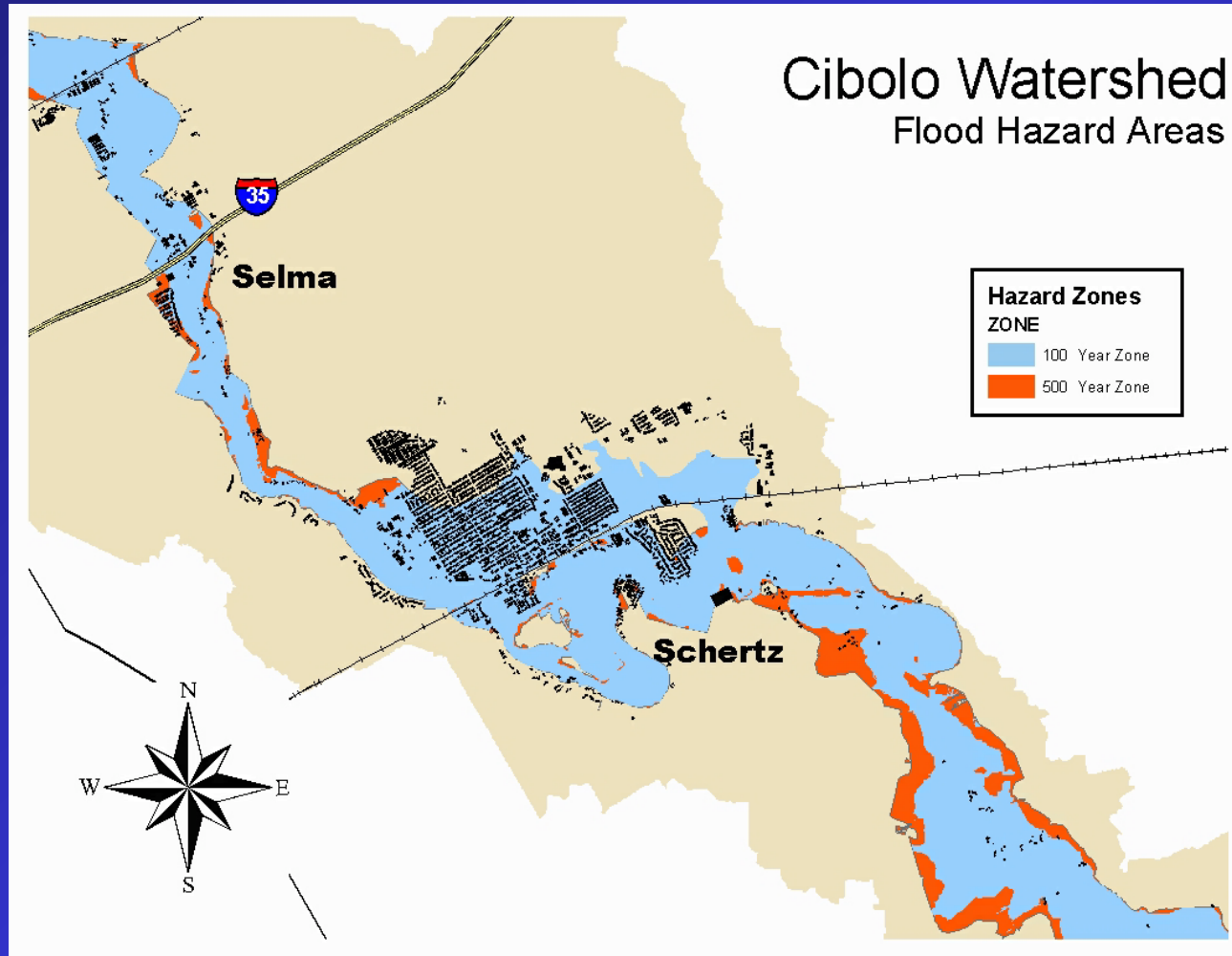
**The recharge structures would provide  
reduction in flood stages**

**Additional measures are being considered  
to reduce flooding in Schertz**



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# ***Cibolo Creek Watershed Study Phase 2***



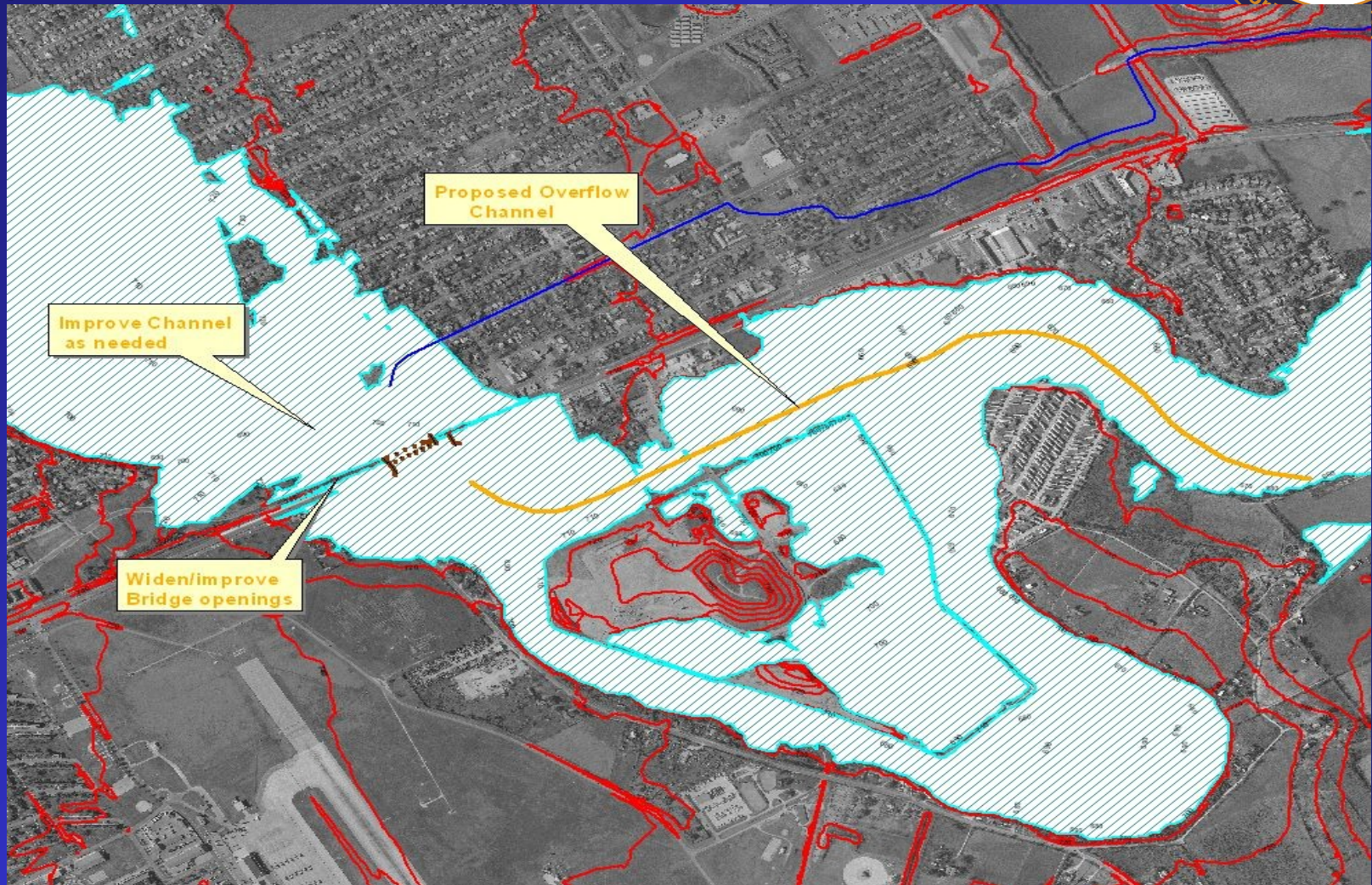
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# ***Cibolo Creek Watershed Study Flood Damage Reduction***



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# ***Cibolo Creek Watershed Study Phase 3***



## **Feasibility Study Phases**

- Phase 1 - Existing Conditions
- Phase 2 - Evaluate Possible Improvement Scenarios
- **Phase 3 - Detailed Evaluation of Alternatives**





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# ***Cibolo Creek Watershed Study Phase 3***



## **Phase 3 Detailed Evaluation of Alternatives**

**During Phase 3, a recommended plan will be selected to go forwarded for USACE headquarters approval**

**Preconstruction, engineering and design (PED) will begin if approved**

**Project will have to Approved and Appropriated by Congress before construction begins**

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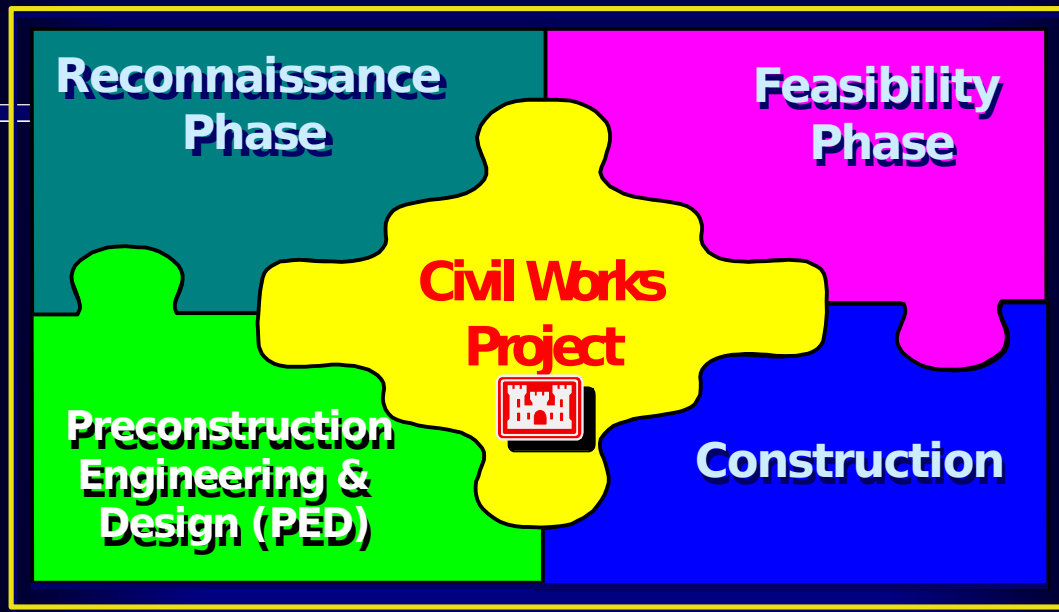


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# ***Cibolo Creek Watershed Study General Overview***



## **Planning Study Process**



Civil Works Project Delivery - "An Overview"

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# ***Cibolo Creek Watershed Study***



## **Summary**

- ❑ Watershed exhibits degradation in select ecosystems
- ❑ Flooding exists in the cities of Schertz and Selma
- ❑ Modeling efforts show potential to increase recharge and reduce flooding



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# ***Cibolo Creek Watershed Study***



## **Point of Contact**

**Ed Foo**

**CESWF-PM-C**

**PO Box 17300**

**Fort Worth, TX 76102-0300**

**817-886-1375**

**[www.swf.usace.army.mil](http://www.swf.usace.army.mil)**

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